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The P R E F A C E.

THE Learned St. Hierom was formerly our Advocate in celebrating the Travels and hardy Adventures of Philosophers to acquire knowledge, and in commemorating the respectful Addresses and Veneration, which great and wise men offer'd to Philosophers. This he performs with most affectionat ardor ; and these Respects are agreeable to the dictates of Right Reason, of Good Nature, and of the Good Manners of the Civil Gentiles. Also our famous Cowley came close to our Concernments, both in his Poetical inspirations, and in his sober Prose. He vindicates the excellency and distributes the main parts of Experimental Philosophy. And thus far we have obtain'd, in our Defence, Authentique zeal, well-grounded Raptures, Ancient and Modern Suffrage ; on both sides accomplish't with the politest Learning and soundest Judgments.

Now, for a Caution, to prevent an unhappy Obstruction, that it may not interrupt the Generous in their poursuit of Reviving and Promoting the Ingenuous Arts, I shall here enquire a little the Cause of their Decay in degenerating Ages. And the Roman *Satyrift*, whose style was too often polluted by the profligate Luxury of his days, hath yet reserv'd, for our occasions, a clean, elegant and brief Declamation, (perhaps one of the best Remains of Antiquity,) since pertinent and argue Declamations had a great name in the Schools of Rome and of old Greece.

Tum ille (Eumolpus Encolpio,) pecuniae, inquit, cupiditas

* *I. e. Umbras rerum atque imagines tantum, & simulacra rerum inaria, surdo figurarum discrimine. Sic Jan. Deus. V. Plin. l.35. c.11. Conversiones, inquit Erhardus, & mutations. Sic Dan. H. infus; Quis Deus Tropica iac induxit, aut quæ est hac communatio?*

*hæc Tropica * instituit. Priscis enim temporibus, cum adhuc nuda virtus placeret, vigebant Aites Ingenuæ; summumque certamen inter homines erat, ne quid profuturum seculis diu lateret. Itaq; har-*

harculâ * omnium herbarum succos Democritus expressit ; & , ne Lapidum Virgultorumque vis lateret, etatem inter Experimenta consumpsit. Eudoxus quidem in cacumine excelsissimi montis consenuit, ut Astrorum Celiq; motus deprehenderet : Et Chrysippus, ut ad Inventionem sufficeret, ter helleboro animum detergit. Verum, ut ad Plastas convertar, Lysippum statuæ unius lineamentis inherentem inopia extinxit ; & Myron , qui ferè hominum animas ferarumque, ære comprehendenterat, non invenit heredem. At nos vino scortisque demersi, ne paras quidem Artes audemus cognoscere ; sed, accusatores Antiquitatis, vitia tantum docemus & discimus. Ubi est Dialectica ? Ubi Astronomia ? Ubi Sapientiae consultissima via ? Quis unquam venit in Templum, & votum fecit, si ad Eloquentiam pervenisset ? quis, si Philosophiae fontem invenisset ? Ac ne bonam quidem mentem, aut bonam valetudinem petunt ; sed statim antequam limen Capitolii tangant, alius donum promittit, si propinquam divitem extulerit ; alius si thesanum effoderit ; alius, si ad trecenta H. S. salvus pervenerit. — — Nolite ergo mirari, si Pictura defecit, cum omnibus Diis Hominibusque formosor videatur massa Auri, quam quicquid Apelles Phidiásve, Græculi delirantes, fecerunt.

By comparing this collapsed state of the noblest Sciences, we may see the peculiar happiness of this present Age, in which there are in all parts of the Learned World so many excellent persons of Lustre and Honour, of eminent Authority, great Power, and ample Fortunes, who do generously contribute the influence of their Countenance, many their own Personal Assistance, and some their Treasures, to recover and adorn the Antient Arts, and to supply Extraordinary Aids and Accommodations.

And this Glory is principally to be ascribed to our Most Gracious King, the Founder of the Royal Society, whose propitious Patronage doth cherish so many learned Votaries and curious Artificers in all his Kingdoms, and as far as his Dominions do extend ; and whose great Example doth invite and encourage

* Erhard, lege arcu'la. Nemo fuit, qui daret significatum ignotiori vocabulo. Fuere qui emendant. At ego ex Vitruvio ostendam, Arcam esse Machinam, quâ marinus fluetus à portu reprimitur ; & inde dimis. *Arcula*, machina quâ humor aliunde exprimitur. Idem Schickerat, in ep. crit. & Barthius. Vid. Vitruv. l. 5. c. 12. Quibusdam deest hæc vox : Ceterum nullum exemplar habent.

so many forrein *Virtuose* of great fame and solid worth, to afford considerable Assistance towards the Propagation of Philosophical Arts, and the Advancement of knowledg. Of which many pregoant Instances and manifest Matters of Fact do bear evidence, as they are with faithfulness, but without artifice or elaboratness, registered in these un-polish't Volumes.

A Discovery of two New Planets about Saturn, made in the Royal Parisian Observatory by Signor Cassini, Fellow of both the Royal Societys, of England and France; English'd out of French.

I.

A Discovery of 10 small Fixt Stars, and of one New Planet, first.

About the end of October 1671. Saturn pass'd close by *Four* small Fixt Stars, visible only by a Telescope, within the *sinus* of the Water of *Aquarius*, which *Rheita* once took for New Satellits of Jupiter, calling them *Urban-octavians*; but which *Hevelius* (who called them *Vladislavians*) shew'd to be some of the common Fixt Stars, that may every day be seen by a Telescope any where in the Heavens.

This Passage of Saturn gave us occasion to discover in the same place, within the space of 10 minuts, by a Telescope of 17 feet, made by *Campani*, *Eleven* other smaller Stars, one of which, by its particular motion, shew'd it self to be a true *Planet*: which we found by comparing it not only to Saturn and his Ordinary Satellit, discovered 1655 by Mr. *Hugens*, but also to other Fixt Stars, and particularly to three, marked *a, b, d*, in the First Table, where, to avoid a long explication of our *I. Tab. I. Fig. II.* first Observations, we have described the way of Saturn, and that of the New Planet, alwayes marked *c*, beginning from October 25. unto Novemb. 6. We have added to it the Ordinary Satellit, without any particular mark, because he is easie to be known, being in these observations always next to Saturn. The distances are represented in their just proportions; but to

* Note, that in Tab. I. fig. I. the divisions mark'd in the great st Circle do denote the days of the 3 months, nomina-
ted within that circle.

make Saturn more remarkable in the Table, he is represented twice bigger than he should be in proportion to the distances *.

These